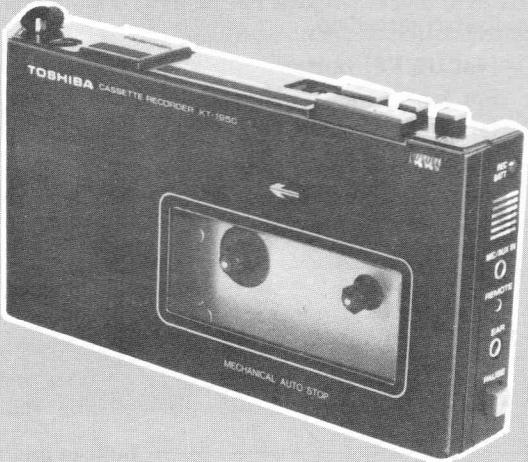


TOSHIBA

CASSETTE RECORDER

KT-1950



SPECIFICATIONS

Track system	2 tracks 1 channel monaural	Ext. mic:
Recording system	AC bias (40 kHz)	impedance 400 ohm ~ 2.2k ohm
Erasure system	Magnetic erasure	input level 0.5mV
Usable tapes	C-30 ~ C-120 cassette tapes	Remote terminal 2.5mm
Tape speed	4.8 cm/sec.	Earphone terminal 3.5mm
Frequency response	125 Hz ~ 8 kHz	DC 6V
Speaker	50 mm dynamic speaker	("AA" cell x 4)
Maximum output	400 mW (10% dist.)	External power supply
Semiconductors	2 ICs (including one for built-in microphone)	terminal [DC IN 6V]
	2 transistors	(Centre pin positive
	4 diodes	polarity)
Input terminals	External input/external microphone (MIC/AUX IN) 3.5 mm	Approx. 3.5 hours
	Aux. in:	("AA" cell x 4)
	impedance 1.5M ohm	161.5(W)x86(H)x29.8(D)(mm)
	input level 100mV	6-3/8"(W) x 3-3/8(H) x 1-3/16"(D)
		Weight 370g [13 oz] (W/O batteries)
		Accessories AC adaptor, Carrying case

Specifications are subject to change without notice.

TE, TU, TA, TC

1. LOCATION OF CONTROLS

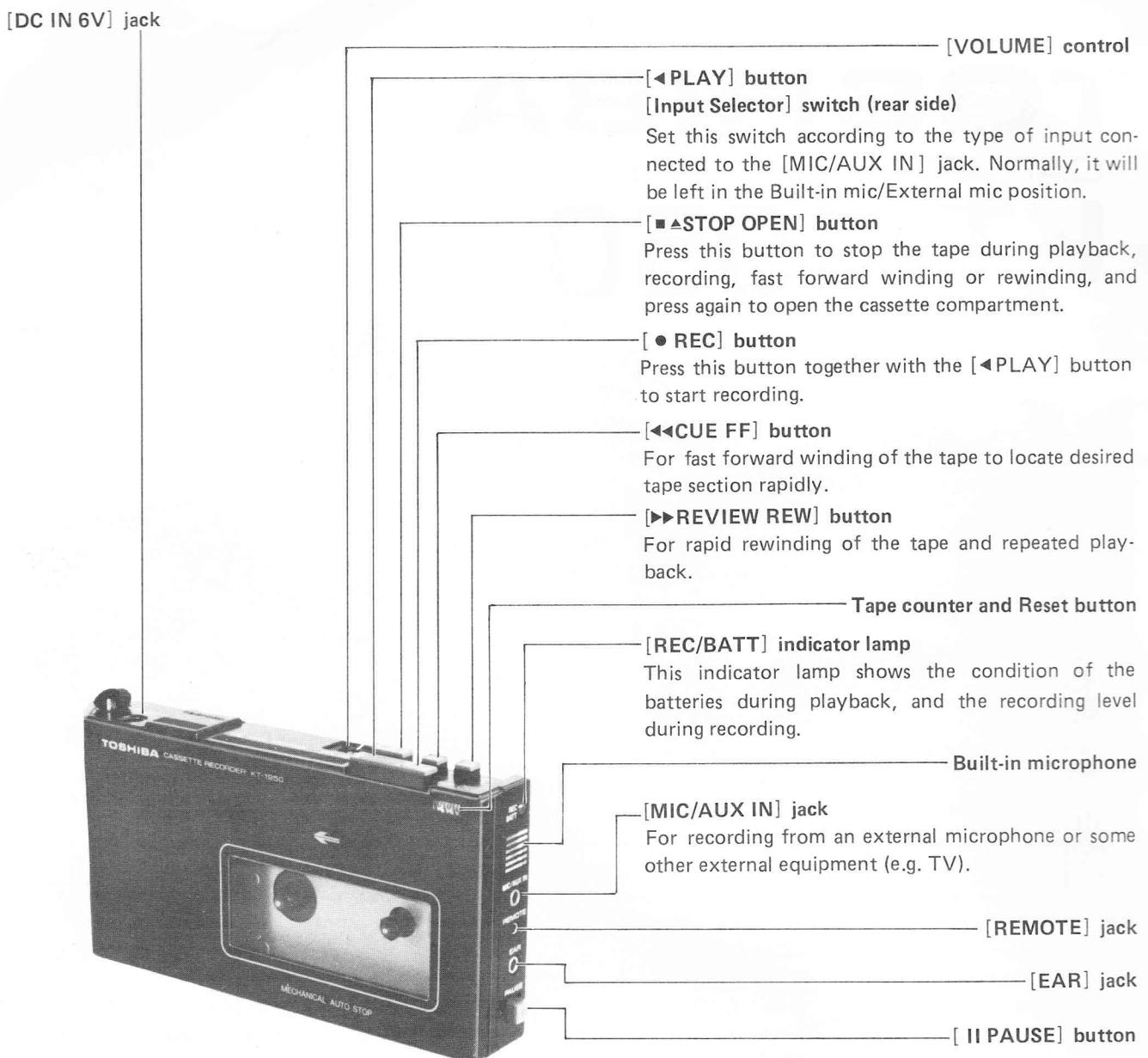


Figure 1

Note: 1. When the [■▲ STOP/OPEN] button is pressed with the recorder standing upright on a level surface, the cassette compartment cover will not open very easily. Incline the recorder

backwards before attempting to remove the cassette tape.
2. Open the cassette compartment by hand when there is no cassette tape inside.

2. DISASSEMBLY INSTRUCTIONS

Removal of Back Cabinet

- (1) Remove the battery cover.
- (2) After removing four screws (A) (B) (C) (D), open the back cabinet and remove a built-in microphone from its cap. The back cabinet can be removed out.

Removal of Front Cabinet

- (1) Remove the back cabinet.
- (2) Remove a screw (E) to take the front panel off.

To Open P.C. Board

- (1) Remove the back cabinet.
- (2) Remove a screw (F) to open the P.C. Board.

Note: When the P.C. Board is fixed, make sure to insert the REC spring into a hole on the record/playback change-over switch.

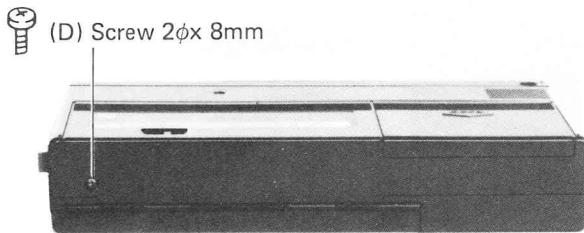


Figure 3

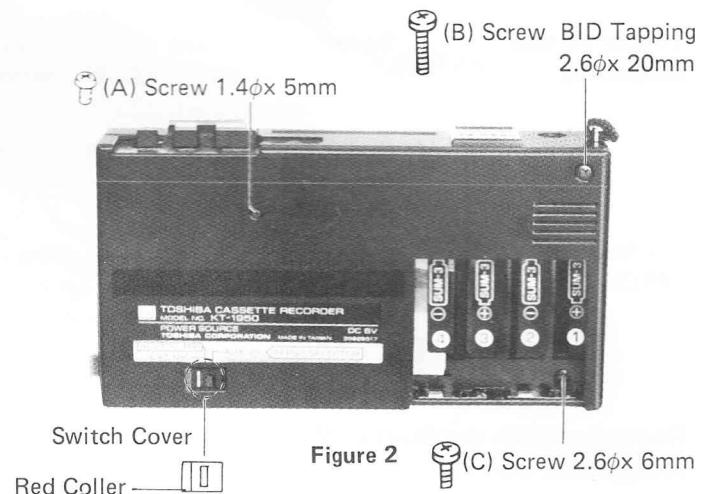


Figure 2

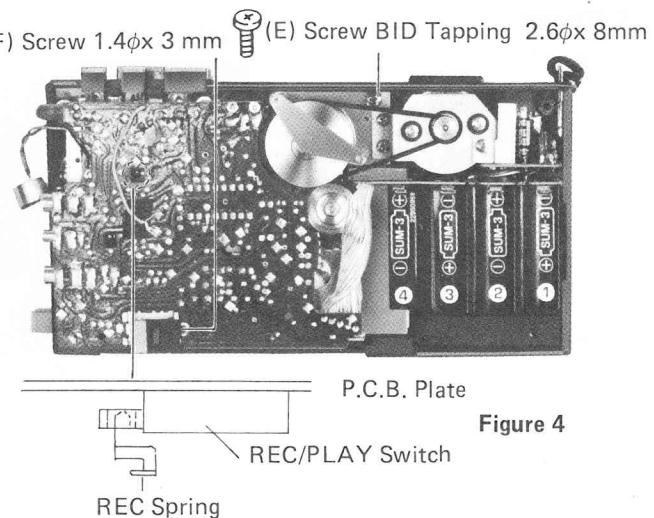


Figure 4

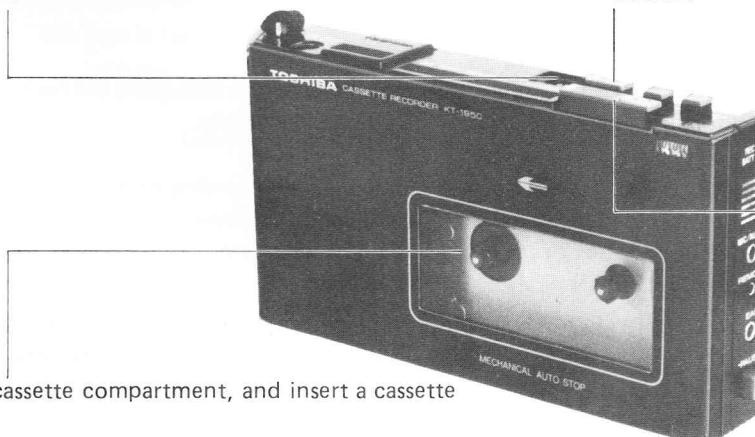
3. OPERATION

Playback Mode

Proceed according to the numbered steps.

3. Adjust the [VOLUME] control.

4. To stop the tape, press the [■ ▲ STOP/OPEN] button.



1. Open the cassette compartment, and insert a cassette tape.

2. Press the [PLAY] button.

Figure 5

- For earphone listening, simply plug the earphone into the [EAR] jack.
 - When the [\blacktriangleleft PLAY] button is pressed, the [REC BATT] indicator lamp will light up.
- To stop the tape temporarily** To temporarily stop the tape movement in any mode (playback, record, fast forward or rewind) press the [II PAUSE] button. Press this button once to stop the tape movement and press it again to start.
- Review function [►►REVIEW REW]** During playback mode, press the [►►REVIEW REW] button. The tape will be rewound only while the button is depressed. When the button is released, the tape will resume the former playback mode.
- Cue function [$\blacktriangleleft\blacktriangleleft$ CUE FF]** Operation is much the same as the review function. Press the [$\blacktriangleleft\blacktriangleleft$ CUE FF] button during playback mode, and release again when the desired section of tape has been located. The tape will then resume playback mode.

Recording With the Built-in Microphone

Always check that the rear [Input Selector] switch has been set to the Built-in mic/External mic position.

Proceed according to the numbered steps.

- 5 To stop recording, press the [■ ▲ STOP/OPEN] button.

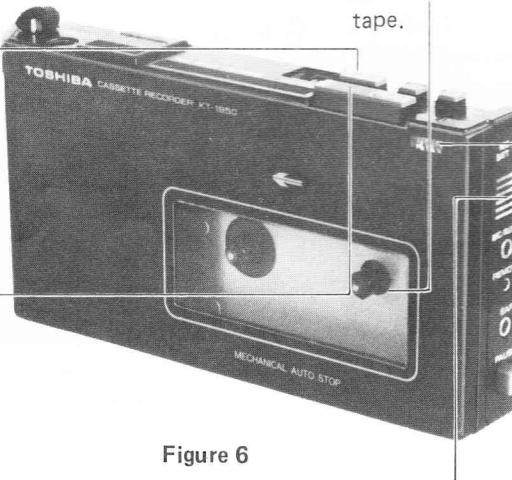


Figure 6

1. Open the cassette compartment, and insert a cassette tape.

3. Press the [\bullet REC] and [\blacktriangleleft PLAY] buttons together.

2. Reset the tape counter to "000".

4. Speak into the built-in microphone. To monitor what is being recorded, plug an earphone into the [EAR] jack.

- The [REC/BATT] indicator lamp will turn on and off according to the volume level of the recorded source, thereby indicating that recording is in progress.

- The KT-1950 has been equipped with an automatic recording level control circuit (ALC) that will automatically adjust recording to a suitable level.

Note that it will not be possible to press the [\bullet REC] button if the erasure prevention tabs along the back ridge of the cassette tape have been broken off. Do not apply undue pressure to this button in this case.

ASO (Auto Shut Off)

When the end of the tape is reached during playback or recording mode, the tape stops automatically, the depressed control buttons release, and the power supply is turned off. (Note, however, that ASO does not operate during fast forward and rewind modes. In these modes it is necessary to press the [■ ▲ STOP/OPEN] button).

Erasure of recorded tapes

Set the Input Selector to the External Input position. Then simultaneously press the [\bullet REC] and [\blacktriangleleft PLAY] buttons to commence recording mode. The pre-recorded material will be erased. Note, however, that this must be done in a relatively quiet place. Any loud noises nearby will be recorded.

4. OPERATION PRINCIPLE OF MECHANISM

Stop:

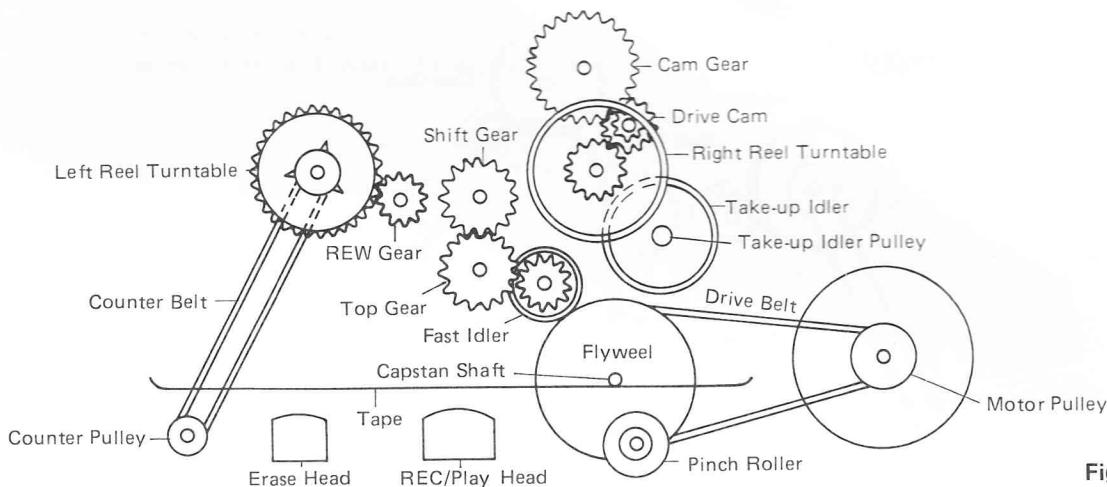


Figure 7

Playback: When the PLAY button has been pushed, the motor rotates and the pinch roller hits upon the capstan shaft to feed a tape. At the same time, the take-up idler touches the flywheel and the take-up idler pulley hits upon the right reel turntable to take up the tape. The left reel turntable rotates as if it is pulled by the tape. The tape counter pulley rotates also with the counter belt.

Recording: Operation is the same as that for playback, except that the erase head moves to the position indicated by the dotted line and touches the tape.

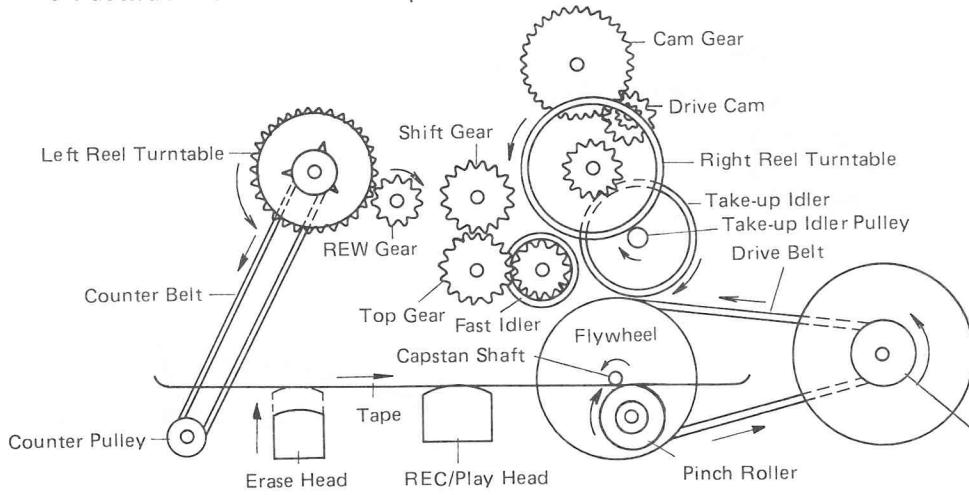


Figure 8

Rewinding: Push the REVIEW REW button. Then, the shift gear touches the REW gear and rotation of the flywheel is transmitted in following order: fast idler → top gear → shift gear → REW gear → left reel turntable, and the tape is rapidly rewound.

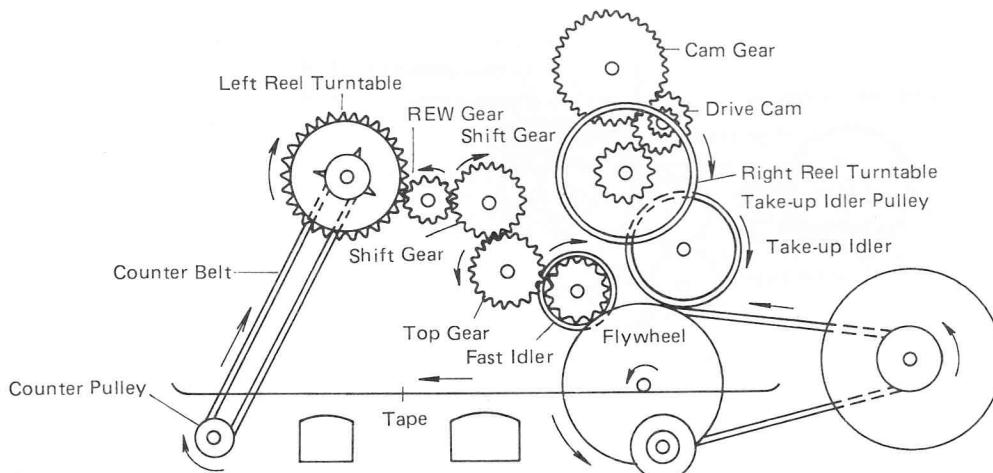


Figure 9

Fast Forward: Push the CUE FF button. Then, the shift gear touches the right reel turntable and rotation of the flywheel is transmitted in following order: fast idler → shift gear → right reel turntable, and the tape is rapidly fed.

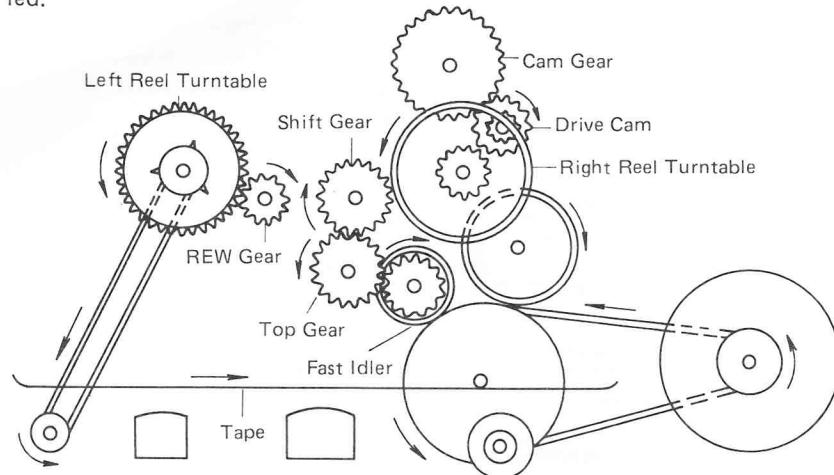


Figure 10

Repeat:

When the REVIEW REW button is pushed during playback, the pinch roller separates from the capstan shaft and the record/playback head separates from the tape. At the same time, the take-up idler pulley separates from the right reel turntable. As soon as the fast idler touches the flywheel, the shift gear hits upon the REW gear and the tape is rapidly rewound. When the REVIEW REW button is released, playback is resumed.

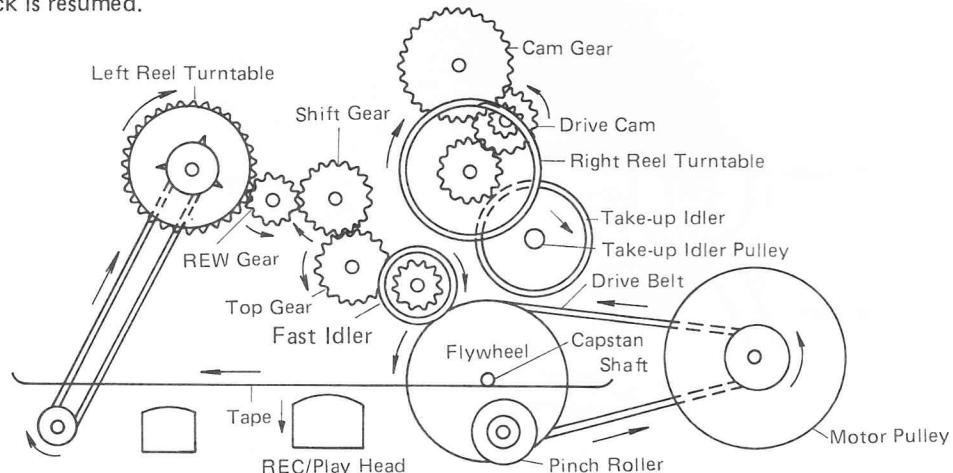


Figure 11

Detecting

program head: When the CUE FF button has been pushed during playback, the pinch roller separates from the capstan shaft and the record/playback head separates from the tape. At the same time, the take-up idler pulley separates from the right reel turntable. As soon as the fast idler touches the flywheel, the shift gear touches the right reel turntable and the tape is rapidly fed. When the CUE FF button is released, playback is resumed.

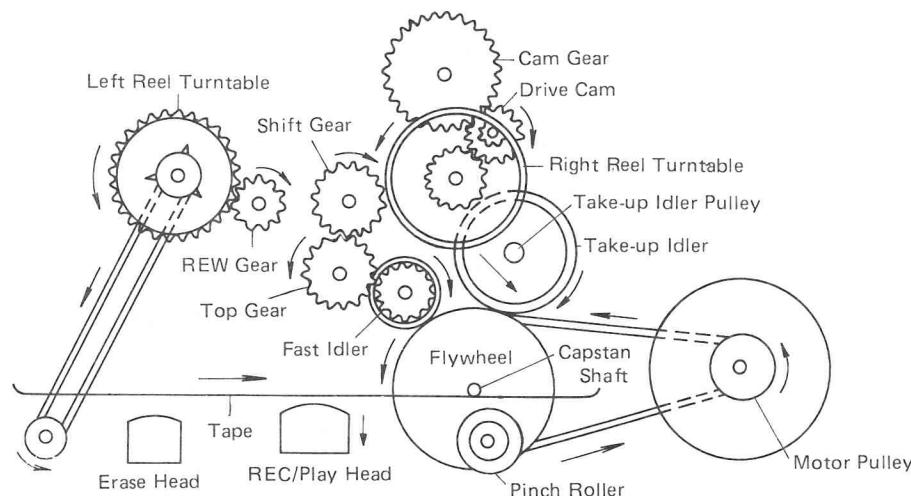


Figure 12

5. ELECTRICAL ADJUSTMENT

1. Connect a VTVM across the Earphone Jack.
2. Playback the test tape (6.3 kHz) and adjust the azimuth adjusting screw so that the VTVM indicates maximum position.

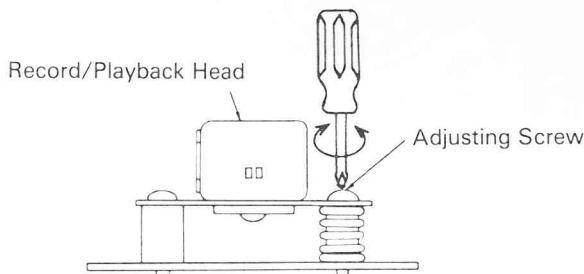
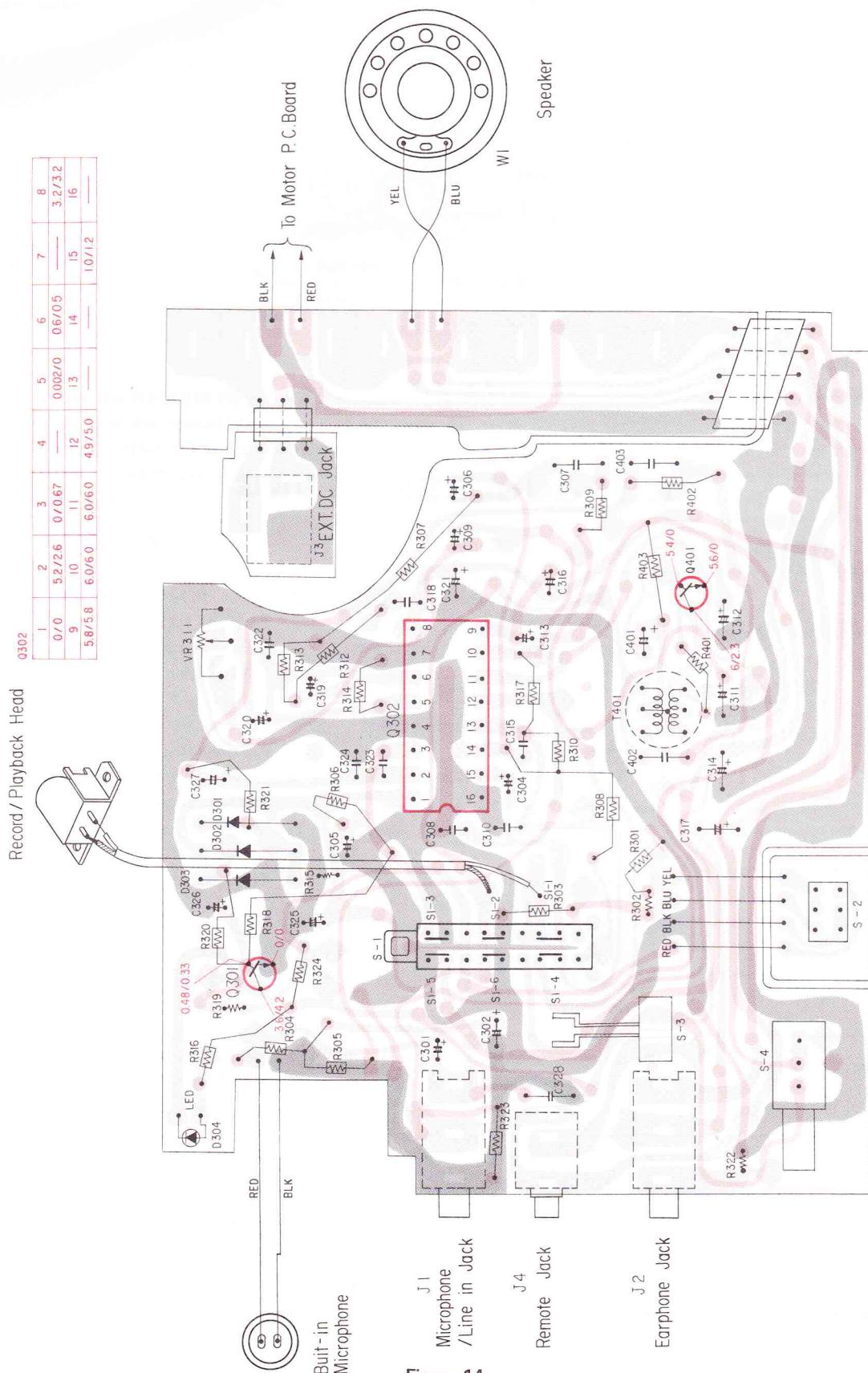


Figure 13

6. TROUBLE SHOOTING

Symptom	Cause	Correction
Cassette tape cannot be inserted.	<ul style="list-style-type: none"> • Cassette tape is upside down. • Cassette tape has not been inserted properly. 	<ul style="list-style-type: none"> • Insert the cassette with the exposed tape side facing upwards. • Insert the cassette tape squarely into the compartment.
Cassette tape does not move.	<ul style="list-style-type: none"> • Batteries not inserted in correct arrangement. • AC adaptor plugged in recorder only. • External microphone plugged in, but remote switch turned off. • Battery contacts in battery compartment have become soiled. • [II PAUSE] button has been depressed. 	<ul style="list-style-type: none"> • Reinsert the batteries in accordance with the diagram. • Either disconnect the AC adaptor (for battery power) or plug in properly to DC IN 6V jack and wall socket (for AC power). • Turn the remote switch on. • Clean (polish) the contacts with a cloth or suitable brush. • Release the [II PAUSE] button.
Recording button will not lock.	<ul style="list-style-type: none"> • No cassette tape in compartment. • Erasure prevention tabs removed. 	<ul style="list-style-type: none"> • Insert a cassette tape. • Cover up the gap left by the broken off tab.
Poor quality sound during playback	<ul style="list-style-type: none"> • Batteries have run down. • Head has become dirty. • Tape has been damaged or wrinkled. 	<ul style="list-style-type: none"> • Insert fresh batteries. • Clean off dirt with a head cleaning rod. • Try another cassette tape.
Microphone recording not possible.	<ul style="list-style-type: none"> • [Input Selector] switch left in External Input position. 	<ul style="list-style-type: none"> • Return [Input Selector] switch to Built-in mic/External mic position.

7. P.C. BOARD PARTS LOCATION



8. SCHEMATIC DIAGRAM

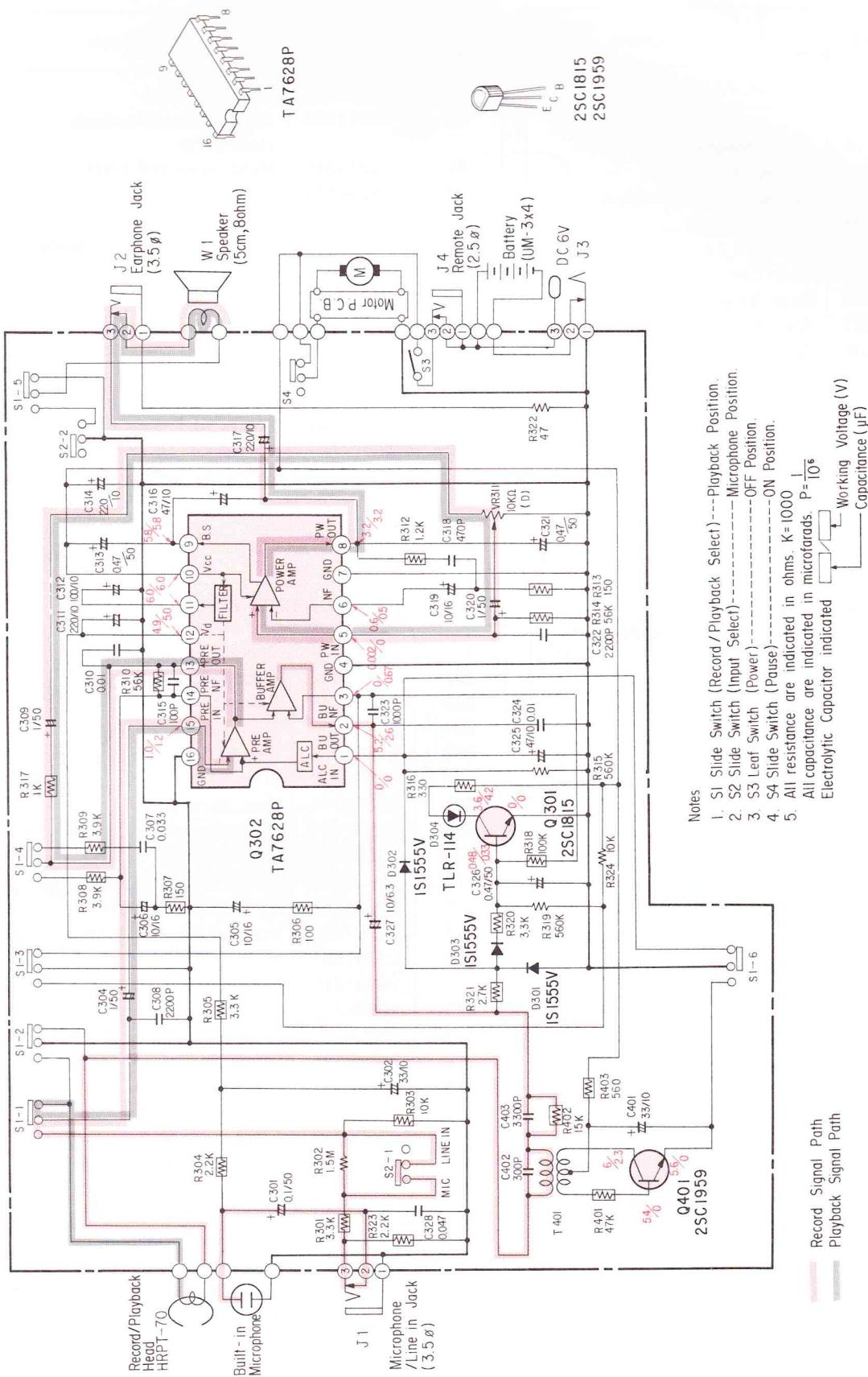
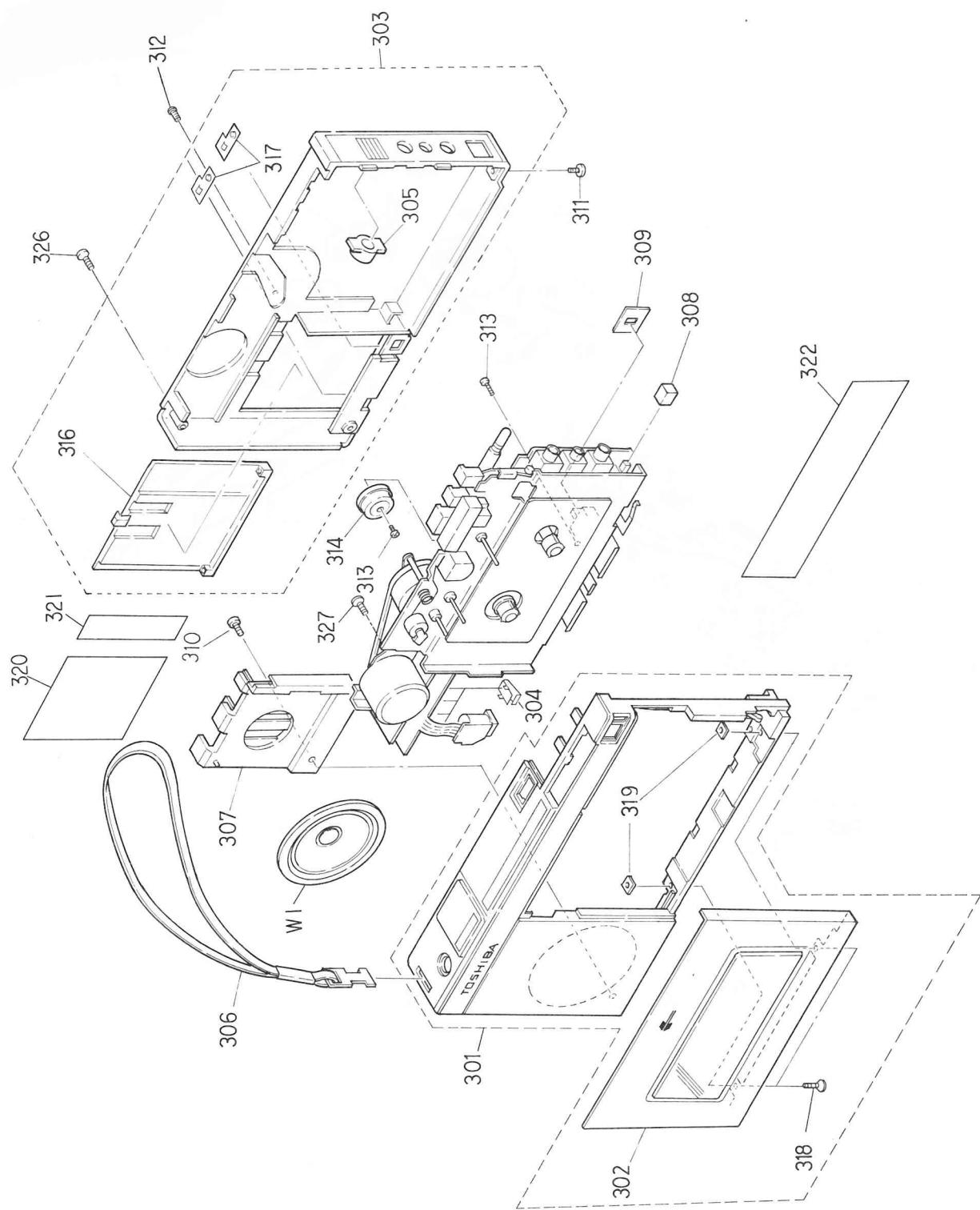


Figure 15

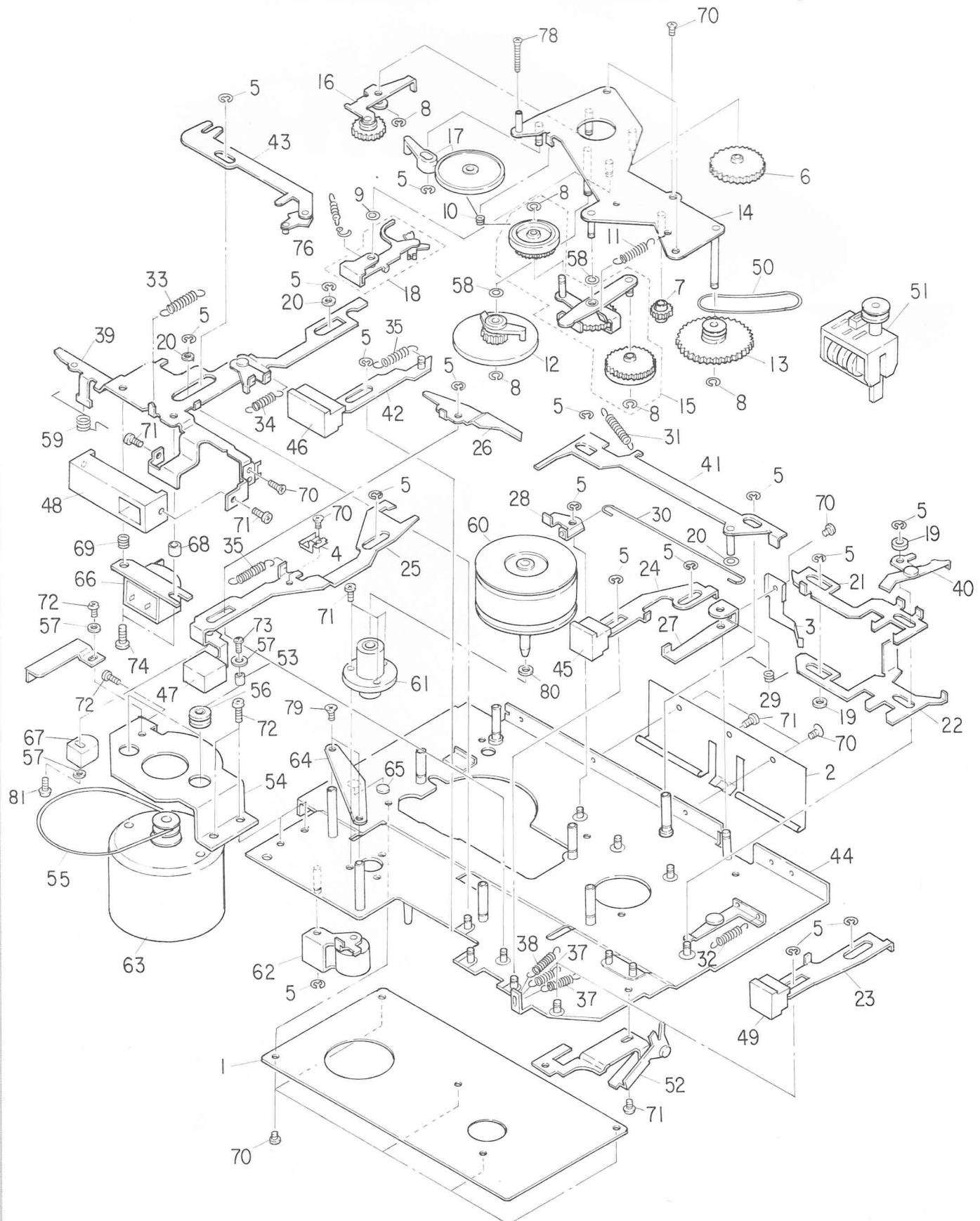
9. EXPLODED VIEW (CABINET)



NOTE: Parts excluded in the Parts List are not available as replacement parts.

Figure 16

10. EXPLODED VIEW (MECHANICAL)



NOTE: Parts excluded in the Parts List are not available as replacement parts. **Figure 17**

Figure 17

11. PARTS LIST

Symbol No.	Part No.	Description	Symbol No.	Part No.	Description
MECHANICAL PARTS					
1	25736774	Cover, Mechanism	65	25764593	Washer, Thrust
2	25779076	Spring, Holder	66	22217346	Head, Record/Playback (HRPT-70)
3	25779052	Spring, Erase Prevention	67	22218218	Head, Erase (HET-47)
4	25779053	Spring, Record	68	25726563	Spacer
5	25735159	E Ring, 1.5φ	69	25772504	Spring, Head
6	25756226	Gear, Cam	70	22707495	Screw, FLT, 1.4φ x 1.6mm
7	25756220	Gear, Rewind	71	22707496	Screw, PAN, 1.4φ x 2.5mm
8	25764361	Washer	72	22701467	Screw, BID, 2φ x 3mm
9	25764566	Washer	73	22707451	Screw, BID, 2φ x 5mm
10	25773464	Spring, Take-up Lever	74	22707505	Screw, BID, 2φ x 6mm
11	25776153	Spring	76	25776154	Spring
12	25712372	Reel Ass'y, Take-up	78	22702173	Screw, PAN, 1.4φ x 6mm
13	25712373	Reel Ass'y, Supply	79	22707544	Screw, FLT, 1.4φ x 20mm
15	25713515	Gear Ass'y, Fast	80	25764597	Washer
16	25713516	Lever Ass'y Cam Drive	81	22702172	Screw, PAN, 2φ x 8mm
17	25713517	Lever Ass'y, Take-up			
18	25791079	Lever Ass'y, Detect			
19	22703166	Washer			
20	25726562	Roller			
29	25773465	Spring, Erase Prevention			
30	25775191	Wire, Release	301	25817584	Cabinet Front Ass'y
31	25776145	Spring	302	25817508	Cassette Cover Ass'y
32	25776146	Spring	303	25817585	Cabinet Back Ass'y
33	25776147	Spring	304	25839256	Spring, Battery
34	25776148	Spring	305	25858478	Cap, Microphone
35	25776149	Spring	306	33993028	Strap Ass'y
37	25776151	Spring	307	25838214	Case, Battery
38	25776152	Spring	308	25837311	Knob, Switch
40	25791098	Lever Ass'y, Up Drive	309	25833446	Cover, Switch
45	25782347	Button, Fast Forward	310	22707037	Screw, BID, 2.6φ x 6mm
46	25782348	Button, Stop	311	22707485	Screw, BID, 2φ x 8mm
47	25782349	Button, Record	312	22707500	Screw, PAN, 1.4φ x 5mm
48	25782350	Button, Play	313	22707501	Screw, PAN, 1.4φ x 3mm
49	25782352	Button, Rewind	314	25837310	Knob, Volume
50	25755443	Belt, Counter	316	25838213	Cover, Battery
51	25873214	Counter	317	25839255	Plate, Battery
53	25726568	Spacer, 2φ x 3mm	318	22707486	Screw, FLT, 1.7φ x 4mm
55	25755435	Belt, Drive	319	25846413	Nut, Plate
56	25761424	Cushion, Motor	320	22950968	Label, Battery, 1
57	25735249	Washer	321	22900036	Label, Battery, 3
58	25764534	Washer	322	22900035	Label, Caution (TE, TU)
59	25773466	Spring, Pinch Lever	322	22900034	Label, Caution (TA, TC)
60	25717431	Flywheel Ass'y	325	25764392	Washer
61	25717432	Capstan Ass'y, Holder	326	22707516	Screw, BID, Tapping, 2.6φ x 20mm
62	25717433	Lever Ass'y, Pinch	327	22707525	Screw, BID, Tapping, 2.6φ x 8mm
63	25791104	Motor Ass'y			

Symbol No.	Part No.	Description
TRANSISTORS, DIODES AND IC		
Q301		Transistor, 2SC1815-BL
Q302		IC, TA7628P
Q401		Transistor, 2SC1959-Y
D301		Diode, 1S1555V
D302		
D303		
D304		Diode, TLR114
ELECTRICAL PARTS		
J1, 2	22163693	Jack, 3.5φ Microphone/Earphone
J3	22163721	Jack, DC Power (DC-6V)
J4	22163722	Jack, 2.5φ Remote Control
S1	22195509	Switch, Slide, Record/Playback
S2	22195431	Switch, Slide, INPUT Selector
S3	22195432	Switch, Leaf, Power
S4	22195426	Switch, Slide, Pause
T401	22235171	Coil, OSC, Bias
W1	22152280	Speaker, 5 cm, 0.2W, 8 ohm
	22154080	Microphone Unit
CAPACITORS		
<i>K = ±10%, M = ±20%</i>		
ABBREVIATIONS: EL = Electrolytic, CD = Ceramic Disk		
C301	22440321	EL, 0.1mfd, 50V
C302	22440337	EL, 33mfd, 10V
C304	22440272	EL, 1mfd, 50V
C305	22440276	EL, 10mfd, 16V
C306	22440276	EL, 10mfd, 16V
C307	22360486	CD, 0.033mfd, 25V, M
C308	22360367	CD, 2200pF, 50V, K
C309	22440272	EL, 1mfd, 50V
C310	22360344	CD, 0.01mfd, 25V, M
C311	22440340	EL, 220mfd, 10V
C312	22440339	EL, 100mfd, 10V
C313	22440271	EL, 0.47mfd, 50V
C314	22440340	EL, 220mfd, 10V
C315	22362101	CD, 100pF, 50V, K
C316	22440336	EL, 47mfd, 10V
C317	22440340	EL, 220mfd, 10V
C318	22360362	CD, 470pF, 50V, K
C319	22440276	EL, 10mfd, 16V
C320	22440272	EL, 1mfd, 50V
C321	22490013	EL, 0.47mfd, 35V, M
C322	22360367	CD, 2200pF, 50V, K
C323	22360366	CD, 1000pF, 50V, K
C324	22360344	CD, 0.01mfd, 25V, M

Symbol No.	Part No.	Description
C325	22440336	EL, 47mfd, 10V
C326	22440271	EL, 0.47mfd, 50V
C327	22490006	EL, 10mfd, 6.3V, M
C328	22360346	CD, 0.047mfd, 12.5V, M
C401	22440337	EL, 33mfd, 10V
C402	22360461	CD, 3300pF, 50V, K
C403	22360461	CD, 3300pF, 50V, K
RESISTORS		
All resistors are carbon film 1/16W, ±5%, unless otherwise noted. K = ±10%		
R301	22570400	3.3k ohm
R302	22570507	1.5M ohm, K
R303	22570406	10k ohm
R304	22570410	2.2k ohm
R305	22570400	3.3k ohm
R306	22570382	100 ohm
R307	22570384	150 ohm
R308	22570401	3.9k ohm
R309	22570401	3.9k ohm
R310	22570415	56k ohm
R311	22613034	10k ohm, Variable D
R312	22570395	1.2k ohm
R313	22570384	150 ohm
R314	22570415	56k ohm
R315	22570427	560k ohm, K
R316	22570388	330 ohm
R317	22570394	1k ohm
R318	22570418	100k ohm
R319	22570427	560k ohm, K
R320	22570400	3.3k ohm
R321	22570399	2.7k ohm
R322	22570378	47 ohm
R323	22570410	2.2k ohm
R324	22570406	10k ohm
R401	22570414	47k ohm
R402	22570408	15k ohm
R403	22553561	560 ohm, 1/8W
ACCESSORIES		
	22138414	Adaptor, AC (TA, TC)
	22992055	Case, Carring
	22902594	Owner's Manual (TE, TU)
	22902687	Owner's Manual Ass'y (TA, TC)

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